

EXHIBIT A  
San Geronimo Valley Sediment Source Reduction Project  
Statement of Work

Under direction of the Grantor, and under the following conditions and terms, the Grantee will:

1. Reduce sediment contributions to the Woodacre Creek, Montezuma Creek and Arroyo Creek watersheds, tributaries to San Geronimo Creek, by implementing improvements at 32 sites as recommended by existing SPAWN and Pacific Watershed Associates sediment source surveys to restore habitat of coho salmon.
2. Work will be conducted in the upland area of the Woodacre Creek, Montezuma Creek and Arroyo Creek watersheds, which are tributaries to San Geronimo Creek, which in turn is located in the eastern portion of the Lagunitas Creek watershed. The project sites are located in Township 2N, Range 7W Sections 11,13,14 and Township 2N, Range 7W Sections 16, 17, 21 of the San Geronimo 7.5 Minute U.S.G.S. Quadrangle, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. The following includes all road drainage, decommissioning and road to trail conversion treatments for this project:

Upgrade, convert or decommission 2.94 miles of road thereby saving 3,260 cubic yards of sediment from delivery to Woodacre Creek, Montezuma Creek, and Arroyo Creek. The Grantee shall upgrade, convert to trail or decommission 32 sites as necessary to disperse road runoff and decrease sedimentation.

Stream-crossing treatments:

Construct a total of 11 critical dips to prevent possible diversions at streams with diversion potential;

Install 2 culverts where they are currently absent,

Replace 11 undersized culverts,

Clean/clear culvert at 2 sites to remove sediment or debris from culvert inlet,

Install 1 trash rack at culvert inlet to prevent plugging,

At 6 sites, add a total of 190 yd 3 of rock armor on inboard and outboard stream crossing fillslopes, ditches and headcuts,

Excavate 120 cubic yards of sediment at 6 sites.

Road Treatments:

At 3 locations clean or cut 600 feet of drainage ditch,

Outslope the road and remove the ditch at 9 locations totaling 5,580 feet

Outslope the road and retain the ditch at 5 locations for a total of 2,230 feet

Repave a total of 2,500 sq. ft. of road at 4 stream crossings and 7 ditch relief culvert installations,

Install 59 rolling dips

Install or replace 12 ditch relief culverts.

Install a downspout on a ditch relief culvert

At 20 locations use a total of 950 cubic yards of road rock to rock the road surface at 5 stream culvert installation, 1 critical dip, 4,245 feet of out slope and remove ditch and 1,450 feet of outslope and retain ditch.

Install miscellaneous treatments at 7 specific site locations (Sites 3, 7, 13, 18, 23, 28, 30)

Approximately 120 cubic yards of fill slope and stream crossing fill from stream crossings and landing/slide/fillslope sites will be excavated and stored in stable locations. The following treatments will be implemented where appropriate:

4. The following treatments will be implemented where appropriate:
  - Upgrading stream crossings installing culverts sized for the 100-year flood flow, including sufficient capacity for expected wood and sediment; eliminate diversion potential by installing a critical dip; replacing culverted fills with hardened fords or armored fills, etc
  - Excavation of unstable or potential unstable sidecast materials that could otherwise fail and deliver sediment to a stream
  - Dispersion of road runoff and disconnecting road surface runoff from streams, including but not limited to, berm removal, road surface shaping and installation of ditch relief culverts
  - Seed and mulch all exposed soils which may deliver sediment to a stream. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years
5. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game.
6. The Grantee shall notify the DFG Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for DFG personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
  - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
  - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
  - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service (NMFS),

Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.

- The Grantee will provide fish relocation data to the DFG Grant Manager on a form provided by the DFG, unless the relocation work is performed by DFG personnel.
  - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.
  - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
  - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
7. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the California Salmonid Stream Habitat Restoration Manual, Flosi et al. and the California Salmonid Stream Restoration Manual, Third Edition, Volume II, Part XI, January 2004.
8. Annually and upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, *Microsoft Word* compatible, copy on a CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than November 1 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
- Grant number
  - Project name
  - Geographic area (e.g., watershed name)
  - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
  - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
  - Project start and end dates and the number of person hours expended
  - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
  - Expected benefits to anadromous salmonids from the project
  - Labeled before and after photographs of any restoration activities and techniques
  - Specific project access using public and private roads and trails, with landowner name and address
  - Complete as built road log including sediment savings per site

- Report measurable metrics for the project by responding to the restoration project metrics listed below.

**Habitat Protection and Restoration Projects– Reporting Metrics (HI, HR, HS)**  
(Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
  - Design spec achieved
  - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Upland Habitat Projects (HU)

- Number of actions (road decommission / upgrade)
- Number of acres treated.
- Number of miles of road decommissioned or upgraded (e.g., treated).
- Number of cubic yards of sediment saved from entering the stream per site.

Water Quality Projects

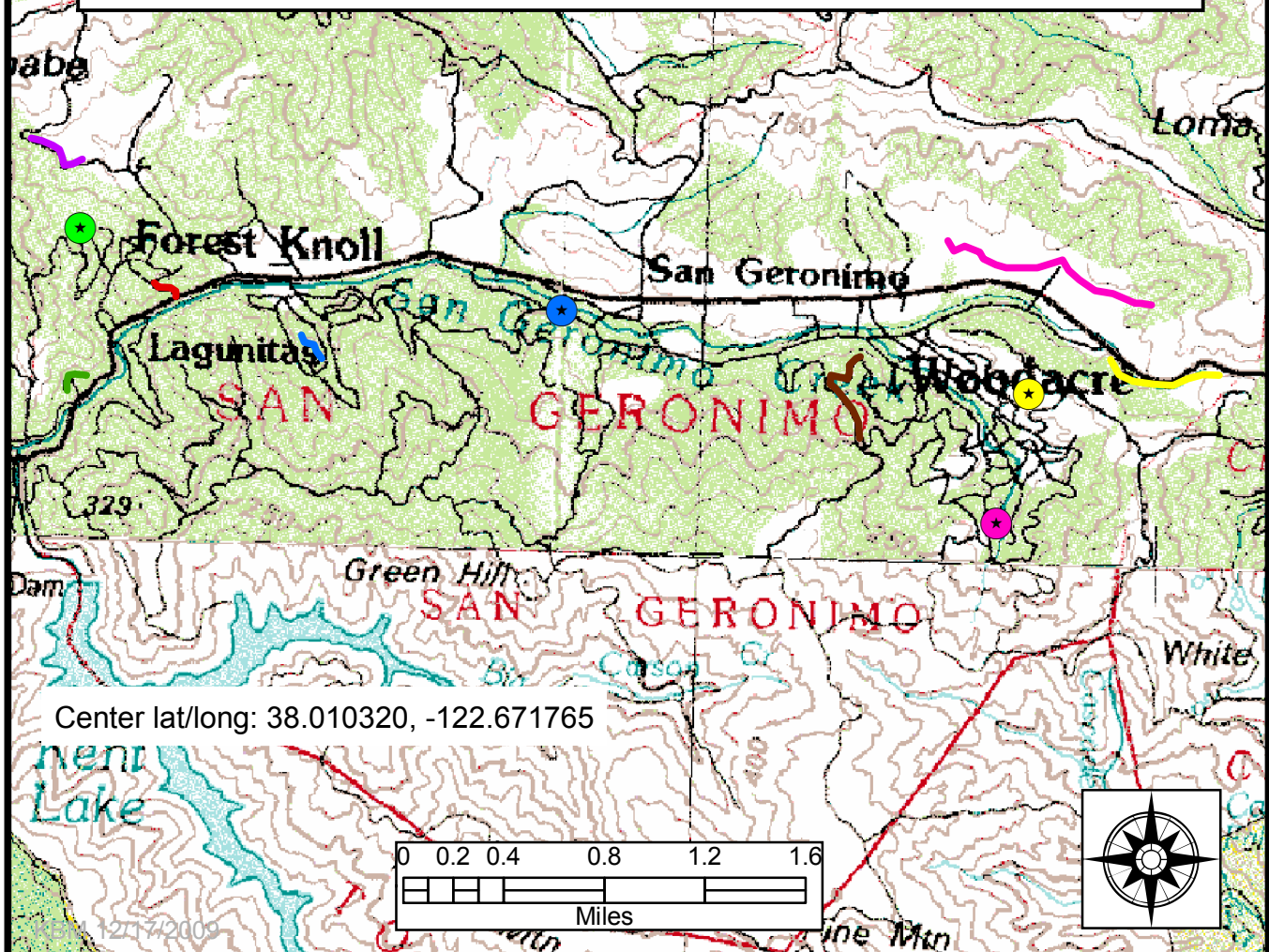
- Water quality limitations addressed by the project (e.g. 303(d), TMDL)
9. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the *San Geronimo Valley Sediment Source Reduction Project*.

# Exhibit C

## San Geronimo Valley Sediment Source Reduction Project Location Map

### T4S, R4W, San Geronimo Quad Marin County

- ★ San Geronimo Valley: Sediment Reduction (Salix)
- ★ San Geronimo Valley: Sediment Reduction feature 18 (Chaparro)
- ★ San Geronimo Valley: Sediment Reduction feature 31 (Sunshine Lane)
- ★ San Geronimo Valley: Sediment Reduction feature 32 (Hill Avenue)
- San Geronimo Valley: Sediment Reduction features 1-3 (East Cintura)
- San Geronimo Valley: Sediment Reduction features 16 and 21 (Rosario and Aztec)
- San Geronimo Valley: Sediment Reduction features 16-17 (Two Park and Spring Ave)
- San Geronimo Valley: Sediment Reduction features 22-24 (Flanders Road)
- San Geronimo Valley: Sediment Reduction features 25-30 (Flanders Road)
- San Geronimo Valley: Sediment Reduction features 4-6, and 19-20 (Arroyo [Alamo], John Lerch and Debra Amerson)
- San Geronimo Valley: Sediment Reduction features 8-13 (Conifer Way)



California Department of Fish and Game  
Natural Diversity Database  
Selected Elements by Common Name - Portrait  
723384\_071\_HU\_San Geronimo Valley Sediment Source Reduction  
SW/4 Petaluma 15' Quadrangle N3800 W122375.5 7.5

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
2 Baker's navarretia <i>Navarretia leucocephala ssp. bakeri</i>	PDPLM0C0E1			G4T2	S2.1	1B.1
3 California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041		Threatened	G4T1	S1	
4 California clapper rail <i>Rallus longirostris obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	
5 California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened		G4T2T3	S2S3	SC
6 Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
7 Contra Costa goldfields <i>Lasthenia conjugens</i>	PDAST5L040	Endangered		G1	S1.1	1B.1
8 Franciscan onion <i>Allium peninsulare var. franciscanum</i>	PMLIL021R1			G5T2	S2.2	1B.2
9 Marin blind harvestman <i>Calicina diminua</i>	ILARAU8040			G1	S1	
10 Marin knotweed <i>Polygonum marinense</i>	PDPGN0L1C0			G1Q	S1.1	3.1
11 Marin western flax <i>Hesperolinon congestum</i>	PDLIN01060	Threatened	Threatened	G2	S2.1	1B.1
12 Napa false indigo <i>Amorpha californica var. napensis</i>	PDFAB08012			G4T2	S2.2	1B.2
13 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
14 Northern Vernal Pool	CTT44100CA			G2	S2.1	
15 Petaluma popcorn-flower <i>Plagiobothrys mollis var. vestitus</i>	PDBOR0V0Q2			G4?TX	SX	1A
16 Point Reyes bird's-beak <i>Cordylanthus maritimus ssp. palustris</i>	PDSCR0J0C3			G4?T2	S2.2	1B.2
17 Point Reyes checkerbloom <i>Sidalcea calycosa ssp. rhizomata</i>	PDMAL11012			G5T2	S2.2	1B.2
18 Sacramento splittail <i>Pogonichthys macrolepidotus</i>	AFCJB34020			G2	S2	SC
19 San Pablo song sparrow <i>Melospiza melodia samuelis</i>	ABPBXA301W			G5T2?	S2?	SC
20 Sonoma spineflower <i>Chorizanthe valida</i>	PDPGN040V0	Endangered	Endangered	G1	S1.1	1B.1
21 Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010			G4	S2S3	SC
22 Ubick's gnaphosid spider <i>Talanites ubicki</i>	ILARA98030			G1	S1	
23 alkali milk-vetch <i>Astragalus tener var. tener</i>	PDFAB0F8R1			G1T1	S1.1	1B.2
24 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC

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Natural Diversity Database  
Selected Elements by Common Name - Portrait  
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Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
25 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
26 fragrant fritillary <i>Fritillaria liliacea</i>	PMLIL0V0C0			G2	S2.2	1B.2
27 golden larkspur <i>Delphinium luteum</i>	PDRAN0B0Z0	Endangered	Rare	G1	S1.1	1B.1
28 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
29 mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040			G2G3	S2S3	
30 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
31 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC
32 round-leaved filaree <i>California macrophylla</i>	PDGER01070			G3	S3.1	1B.1
33 salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
34 saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	ABPBX1201A			G5T2	S2	SC
35 showy rancheria clover <i>Trifolium amoenum</i>	PDFAB40040	Endangered		G1	S1.1	1B.1
36 soft bird's-beak <i>Cordylanthus mollis ssp. mollis</i>	PDSCR0J0D2	Endangered	Rare	G2T1	S1.1	1B.2
37 steelhead - central California coast ESU <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened		G5T2Q	S2	
38 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC

EXHIBIT A  
Lagunitas-Sinaloa Upland Habitat Restoration Project  
Statement of Work

Under direction of the Grantor, and under the following conditions and terms, the Grantee will:

1. Reduce sediment contributions to Spring and Montezuma Creeks by implementing 22 road-to-trail conversion and erosion-control measures within Giacomini Open Space Preserve.
2. Work will be conducted in the Spring Creek and Montezuma Creek watersheds which are tributaries to San Geronimo Creek, tributary to Lagunitas Creek, which flows into Tomales Bay. The project sites are located in Township 2N, Range 7W, of the San Geronimo 7.5 Minute U.S.G.S. Quadrangle, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. The following includes all road drainage upgrades, decommissioning and any road to trail conversion treatments for this project:
  - Construct 6 armored fill crossings that will require 58 cubic yards of riprap,
  - Construct at least 3 critical dips to prevent possible diversions at streams with diversion potential,
  - Excavate soil likely to deliver to the stream at 15 sites, removing a total of 3,405 cubic yards of sediment primarily at fillslopes and stream crossings,
  - At 1 site add a total of 28 cubic yards of rock armor on inboard and outboard stream crossing fill slopes, ditches, and headcuts.
  - Install 12 cross road drains to improve road drainage
  - Install 50 rolling dips to improve road drainage.

Approximately 3,405 cubic yards of fill slope and stream crossing fill from stream crossings and landing/slide/fillslope sites will be excavated and stored in stable locations. The following treatments will be implemented where appropriate:

- Complete excavation of stream crossing fills, including 100 year flood channel bottom widths and 2:1 or otherwise stable side slopes
- Excavation of unstable or potential unstable sidecast materials that could otherwise fail and deliver sediment to a stream
- Road surface treatments (ripping, outslowing and/or cross draining) to disperse and reduce surface runoff
- Seeding and mulching of all exposed soils which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for

broadcast planting of seed, after a period of three years.

4. The following treatments will be implemented where appropriate:
  - Upgrading stream crossings installing culverts sized for the 100-year flood flow, including sufficient capacity for expected wood and sediment; eliminate diversion potential by installing a critical dip; replacing culverted fills with hardened fords or armored fills, etc
  - Excavation of unstable fill slopes or potentially unstable sidecast materials that could otherwise fail and deliver sediment to a stream
  - Dispersion of road runoff and disconnecting road surface runoff from streams, including but not limited to, berm removal, road surface shaping and installation of ditch relief culverts
  - Seed and mulch all exposed soils which may deliver sediment to a stream. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years
5. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game.
6. The Grantee shall notify the DFG Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for DFG personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
  - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
  - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
  - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service (NMFS), Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
  - The Grantee will provide fish relocation data to the DFG Grant Manager on a form provided by the DFG, unless the relocation work is performed by DFG personnel.
  - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.
  - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.

- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
7. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the California Salmonid Stream Habitat Restoration Manual, Flosi et al. and the California Salmonid Stream Restoration Manual, Third Edition, Volume II, Part XI, January 2004.
  8. Annually and upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, *Microsoft Word* compatible, copy on a CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than **November 1** and again each year until completed. The report shall include, but not necessarily be limited to the following information:
    - Grant number
    - Project name
    - Geographic area (e.g., watershed name)
    - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
    - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
    - Project start and end dates and the number of person hours expended
    - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
    - Expected benefits to anadromous salmonids from the project
    - Labeled before and after photographs of any restoration activities and techniques
    - Specific project access using public and private roads and trails, with landowner name and address
    - Complete as built road log including sediment savings per site
    - Report measurable metrics for the project by responding to the restoration project metrics listed below.

**Habitat Protection and Restoration Projects– Reporting Metrics (HI, HR, HS)**  
(Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project

- Design spec achieved
- Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

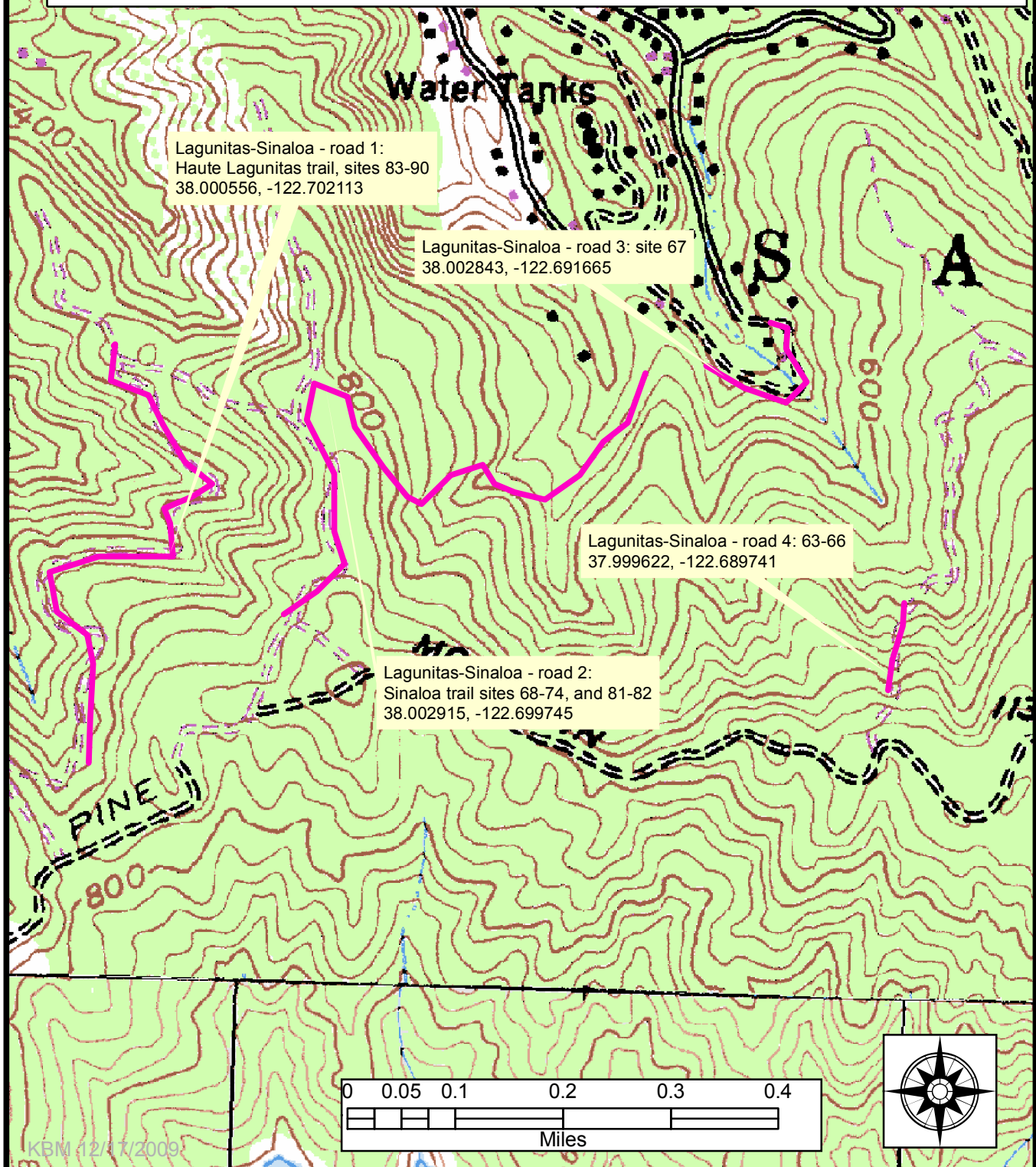
#### Upland Habitat Projects (HU)

- Number of actions (road decommission / upgrade)
- Number of acres treated.
- Number of miles of road decommissioned or upgraded (e.g., treated).
- Number of cubic yards of sediment saved from entering the stream per site.

#### Water Quality Projects

- Water quality limitations addressed by the project (e.g. 303(d), TMDL)
9. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the *Lagunitas-Sinaloa Upland Restoration Project*.

**Exhibit C**  
**Lagunitas-Sinaloa Upland Habitat Restoration Project**  
**Project Location Map**  
**T2N, R7W, San Geronimo Quad**  
**Marin County**



California Department of Fish and Game  
Natural Diversity Database  
Selected Elements by Common Name - Portrait  
723388\_075\_HU\_Lagunitas-Sinaloa Upland Habitat Restoration Project  
T2N, R7W

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
2 Baker's navarretia <i>Navarretia leucocephala ssp. bakeri</i>	PDPLM0C0E1			G4T2	S2.1	1B.1
3 California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041		Threatened	G4T1	S1	
4 California clapper rail <i>Rallus longirostris obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	
5 California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened		G4T2T3	S2S3	SC
6 Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
7 Contra Costa goldfields <i>Lasthenia conjugens</i>	PDAST5L040	Endangered		G1	S1.1	1B.1
8 Franciscan onion <i>Allium peninsulare var. franciscanum</i>	PMLIL021R1			G5T2	S2.2	1B.2
9 Marin blind harvestman <i>Calicina diminua</i>	ILARAU8040			G1	S1	
10 Marin knotweed <i>Polygonum marinense</i>	PDPGN0L1C0			G1Q	S1.1	3.1
11 Marin western flax <i>Hesperolinon congestum</i>	PDLIN01060	Threatened	Threatened	G2	S2.1	1B.1
12 Napa false indigo <i>Amorpha californica var. napensis</i>	PDFAB08012			G4T2	S2.2	1B.2
13 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
14 Northern Vernal Pool	CTT44100CA			G2	S2.1	
15 Petaluma popcorn-flower <i>Plagiobothrys mollis var. vestitus</i>	PDBOR0V0Q2			G4?TX	SX	1A
16 Point Reyes bird's-beak <i>Cordylanthus maritimus ssp. palustris</i>	PDSCR0J0C3			G4?T2	S2.2	1B.2
17 Point Reyes checkerbloom <i>Sidalcea calycosa ssp. rhizomata</i>	PDMAL11012			G5T2	S2.2	1B.2
18 Sacramento splittail <i>Pogonichthys macrolepidotus</i>	AFCJB34020			G2	S2	SC
19 San Pablo song sparrow <i>Melospiza melodia samuelis</i>	ABPBXA301W			G5T2?	S2?	SC
20 Sonoma spineflower <i>Chorizanthe valida</i>	PDPGN040V0	Endangered	Endangered	G1	S1.1	1B.1
21 Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010			G4	S2S3	SC
22 Ubick's gnaphosid spider <i>Talanites ubicki</i>	ILARA98030			G1	S1	
23 alkali milk-vetch <i>Astragalus tener var. tener</i>	PDFAB0F8R1			G1T1	S1.1	1B.2
24 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC

California Department of Fish and Game  
Natural Diversity Database  
Selected Elements by Common Name - Portrait  
723388\_075\_HU\_Lagunitas-Sinaloa Uploand Habitat Restoration Project  
T2N, R7W

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
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27 golden larkspur <i>Delphinium luteum</i>	PDRAN0B0Z0	Endangered	Rare	G1	S1.1	1B.1
28 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
29 mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040			G2G3	S2S3	
30 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
31 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC
32 round-leaved filaree <i>California macrophylla</i>	PDGER01070			G3	S3.1	1B.1
33 salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
34 saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	ABPBX1201A			G5T2	S2	SC
35 showy rancheria clover <i>Trifolium amoenum</i>	PDFAB40040	Endangered		G1	S1.1	1B.1
36 soft bird's-beak <i>Cordylanthus mollis ssp. mollis</i>	PDSCR0J0D2	Endangered	Rare	G2T1	S1.1	1B.2
37 steelhead - central California coast ESU <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened		G5T2Q	S2	
38 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC

**The Grantor's Project Manager** is: Gail Seymour, California Department of Fish and Game, P.O. Box 47, Yountville, CA 94599; 707-944-5579; fax 707-944-5563; email: gseymour@dfg.ca.gov

**The Grantee's Project Manager** is: Paola Bouley, Salmon Protection and Watershed Network (SPAWN), P.O. Box 370, Forest Knolls, CA 94930; 415.663.8590 ext 111; fax: 415.663.9534; email: [Paola@tirn.net](mailto:Paola@tirn.net)

**Grant Term:** June 2010 – May 2012

**EXHIBIT A**  
**Coho Instream Habitat Restoration in the San Geronimo Valley,**  
**Lagunitas Watershed**  
**SCOPE OF WORK**

Under direction of the Grantor, and under the following conditions and terms, the Grantee will:

**I. Goals Statement**

Address a key limiting factor by installing in-stream woody debris structures that will serve to restore refugia habitat for both winter and summer rearing needs for coho salmon in selected reaches of San Geronimo Creek tributary to Lagunitas Creek in Sonoma County.

**II. Objectives Statement**

The objective is to increase the cover and rearing habitat in six existing pools by adding large wood and root wads to at least double the shelter rating, and to increase the residual depth of the pools by an average of six inches.

**III. Location Description**

Conduct work on San Geronimo Creek approximately 1.5 to 3 miles upstream from the confluence of Lagunitas Creek. The project is located in Township 2N, Range 7W Section San Geronimo of the San Geronimo 7.5 Minute U.S.G.S. Quadrangle,  
Lagunitas site: 3800.765 N, 12239.779 W;  
San Geronimo site: 3800.765 N; 12239.779 W;  
Woodacre site: 38 00'41'45" N; 122 38' 37.03" W;  
Forest Knolls site: 38 00 52.23" N; 122 41'35.88" W  
as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.

#### **IV. Quantitative Description**

Habitat improvements will be accomplished by constructing 19 instream structures as follows: seven spiderlogs, 10 root wads, and two cover logs,

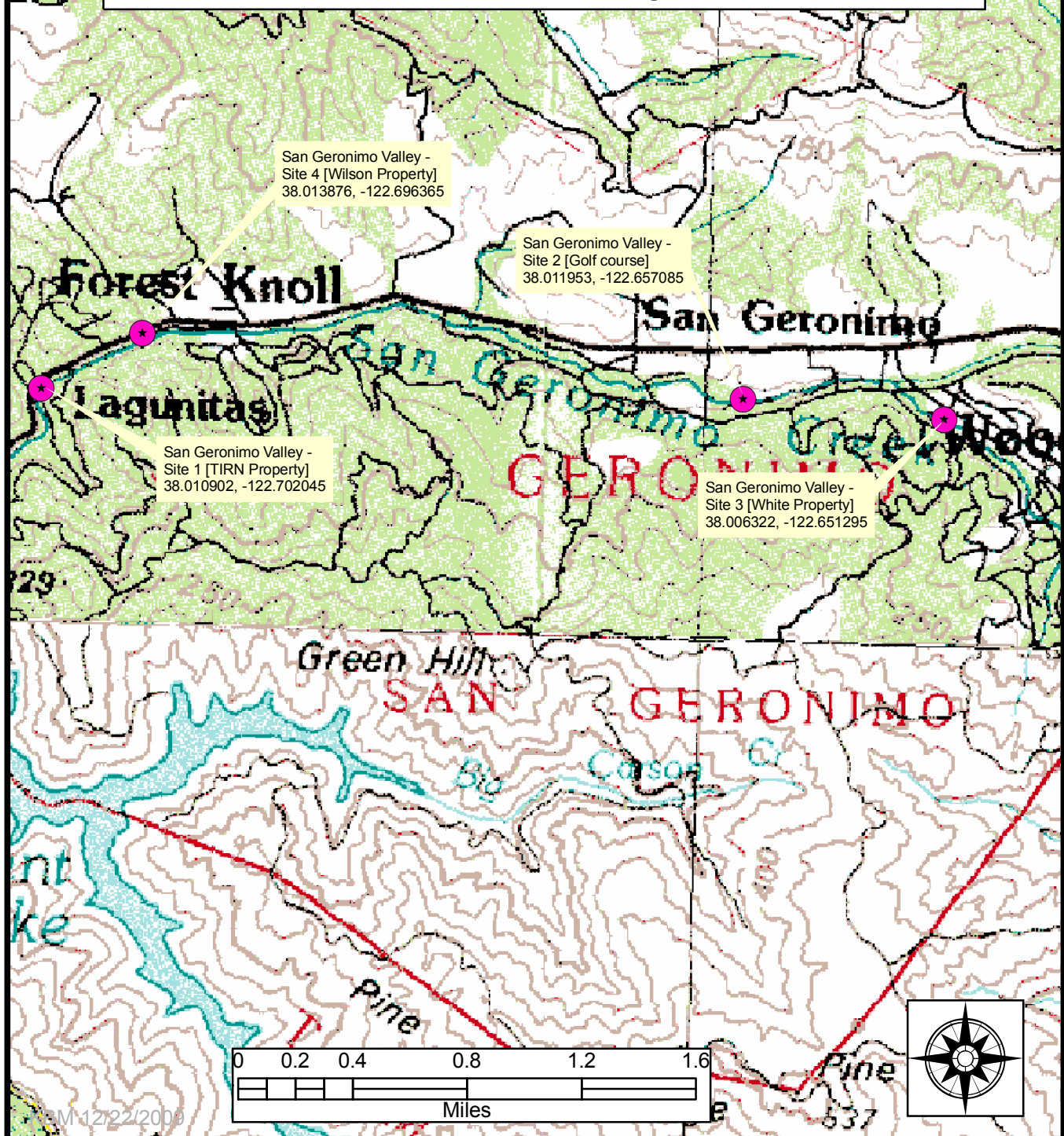
#### **SCOPE OF WORK:**

1. The proposed project will create pool habitat and winter and summer refuge for coho salmon through the placement of large woody debris to increase stream complexity. There are a total of four sites and eight large woody debris structures.
  - a. Site 1 – TIRN Property: This site is 300' in length and is dominated by bedrock on both banks. There are two existing shallow glides separated by a riffle. Two spider log structures and five rootwads will be installed on a point bar to create high flow refugia. Imported boulders will be used for anchoring.
  - b. Site 2 – San Geronimo Golf Course Property: This reach is dominated by shallow pools and riffles. Natural LWD created pool/cover habitat but most is in the form of a single log. Three spider log structures will be installed with 150' between each structure. Existing mature riparian trees and imported boulders will be used for anchoring.
  - c. Site 3 – White Property: There is an existing riffle and shallow pool at this site. Five rootwads and two logs will be installed in the backwater area of this site. Narrowing the channel with the LWD, the channel will scour a deep pool in this reach.
  - d. Site 4 – Wilson Property: This site is a long riffle with shallow pools with excellent spawning habitat and dense riparian canopy but void of LWD shelter/rearing habitat. Two spider log structures will be installed with 200' between each structure. Imported boulders will be used for anchoring.
  - e. The spider log structures are several logs placed at angles to mimic a log or debris accumulation. Grantee will utilize logs, rootwads, and boulders at Sites 1-3. Redwood logs will be 14"-20" in diameter and boulders will be ½ to 1 ton.
  - f. The wood material will be placed using an excavator, operated from the top of the streambank. To minimize the impact of the riparian corridor, existing access points to the stream will be used.
  - g. Upon completion of the project, all disturbed soil will be restored with native

plants supplied from the grantee's (SPAWN) local native plant nursery and mulched with rice straw.

2. All habitat improvements will follow techniques described in the latest edition of the DFG California Salmonid Stream Habitat Restoration Manual, Flosi et al.
3. The Grantee shall notify the DFG Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for DFG personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
  - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
  - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
  - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service (NMFS), Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
  - The Grantee will provide fish relocation data to the DFG Grant Manager on a form provided by the DFG, unless the relocation work is performed by DFG personnel.
  - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.

**Exhibit C**  
**Coho Instream Habitat Restoration in the**  
**San Geronimo Valley, Lagunitas Watershed**  
**Project Location Map**  
**T4S, R4W, San Geronimo Quad**  
**Marin County**



California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

723494\_181\_HI\_Coho Instream Habitat Restoration in the San Geronimo Valley, Lagunitas Watershed  
SW/4 Petaluma 15' Quadrangel N 3800 W122375.5 7.5

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
2 Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	PDPLM0C0E1			G4T2	S2.1	1B.1
3 California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041		Threatened	G4T1	S1	
4 California clapper rail <i>Rallus longirostris obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	
5 California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened		G4T2T3	S2S3	SC
6 Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
7 Contra Costa goldfields <i>Lasthenia conjugens</i>	PDAST5L040	Endangered		G1	S1.1	1B.1
8 Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	PMLIL021R1			G5T2	S2.2	1B.2
9 Marin blind harvestman <i>Calicina diminua</i>	ILARAU8040			G1	S1	
10 Marin knotweed <i>Polygonum marinense</i>	PDPGN0L1C0			G1Q	S1.1	3.1
11 Marin western flax <i>Hesperolinon congestum</i>	PDLIN01060	Threatened	Threatened	G2	S2.1	1B.1
12 Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	PDFAB08012			G4T2	S2.2	1B.2
13 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
14 Northern Vernal Pool	CTT44100CA			G2	S2.1	
15 Petaluma popcorn-flower <i>Plagiobothrys mollis</i> var. <i>vestitus</i>	PDBOR0V0Q2			G4?TX	SX	1A
16 Point Reyes bird's-beak <i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	PDSCR0J0C3			G4?T2	S2.2	1B.2
17 Point Reyes checkerbloom <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	PDMAL11012			G5T2	S2.2	1B.2
18 Sacramento splittail <i>Pogonichthys macrolepidotus</i>	AFCJB34020			G2	S2	SC
19 San Pablo song sparrow <i>Melospiza melodia samuelis</i>	ABPBXA301W			G5T2?	S2?	SC
20 Sonoma spineflower <i>Chorizanthe valida</i>	PDPGN040V0	Endangered	Endangered	G1	S1.1	1B.1
21 Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010			G4	S2S3	SC
22 Ubick's gnaphosid spider <i>Talanites ubicki</i>	ILARA98030			G1	S1	
23 alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	PDFAB0F8R1			G1T1	S1.1	1B.2
24 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC

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Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
25 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
26 fragrant fritillary <i>Fritillaria liliacea</i>	PMLIL0V0C0			G2	S2.2	1B.2
27 golden larkspur <i>Delphinium luteum</i>	PDRAN0B0Z0	Endangered	Rare	G1	S1.1	1B.1
28 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
29 mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040			G2G3	S2S3	
30 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
31 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC
32 round-leaved filaree <i>California macrophylla</i>	PDGER01070			G3	S3.1	1B.1
33 salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
34 saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	ABPBX1201A			G5T2	S2	SC
35 showy rancheria clover <i>Trifolium amoenum</i>	PDFAB40040	Endangered		G1	S1.1	1B.1
36 soft bird's-beak <i>Cordylanthus mollis ssp. mollis</i>	PDSCR0J0D2	Endangered	Rare	G2T1	S1.1	1B.2
37 steelhead - central California coast ESU <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened		G5T2Q	S2	
38 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC